Remarks:

Reconsideration of the application, as amended herein, is respectfully requested.

Claims 1 - 2 and 4 - 7 are presently pending in the application. Claim 1 has been amended. Claim 3 was canceled in a previous response.

Applicants gratefully acknowledge that claims 4 and 5 have been allowed and that claim 7 has been indicated as being allowable if rewritten to include all the limitations of the claims from which that claim depends.

In item 3 of the above-identified Office Action, claims 1, 2, 6 and 7 were rejected under 35 U.S.C. § 103(a) as allegedly being obvious over U. S. Patent No. 5,590,160 to Ostman ("**OSTMAN**") in view of U. S. Patent No. 5,802,046 to Scott ("**SCOTT**").

Applicants respectfully traverse the above rejections, as applied to the amended claims.

More particularly, Applicants have amended claim 1 to recite, among other limitations:

> correlating a received binary-coded spread sequence arriving at a frequency *f* and having *m* bits with a

> locally generated spread sequence having *m* bits, the locally generated spread sequence having *k* sections, the correlating step comprising the following steps:
>
> > storing the received binary-coded spread sequence,
> >
> > splitting the stored received binary-coded spread sequence into *k* sections, **each of the *k* sections including more than one bit**, and
> >
> > correlating the *k* sections of the stored received binary-coded spread sequence at a frequency *k*f* with corresponding *k* sections of the locally generated spread sequence, wherein *m* and *k* are integers greater than 1, and *k* is smaller than *m*. [emphasis added by Applicants]

As such, Applicants' amended claim 1 requires, among other things, that each section of the *k* sections have more than one bit. This is supported in the instant application, for example, on page 12, lines 13 - 23, which states:

> The respectively produced gold code having a length of m = 1023 bits (which is also called a chip) is stored in a data memory 24 and is retained for the search duration. **As such, the chip is split into k = 32 sections, each having n = 32 bits, so that 32 bits (or 31 bits) are stored in each of 32 memory locations.** The arriving signal I is clocked bit by bit through a single-bit register 20 in serial form into a FIFO shift register 21 at a first frequency f of, for example, 1 MHz. In the present case, the FIFO shift register 21 has 32 register positions. The FIFO shift register 21 operates at an oversampling rate of i*f, that is to say 32 MHz. [emphasis added by Applicants]

This was additionally supported by the limitation of claim 1 reciting:

> correlating the *k* sections of the stored received binary-coded spread sequence at a frequency *k*f* with

> corresponding *k* sections of the locally generated spread sequence, **wherein *m* and *k* are integers greater than 1, and *k* is smaller than *m*.** [emphasis added by Applicants]

More particularly, if, as recited by claim 1, the received binary-coded spread sequence has m bits and k sections, **k** being smaller than m, m and k being greater than 1, then each of the k sections must include two or more bits, since k is smaller than m.

Contrary to Applicants' invention of claim 1, **OSTMAN** neither teaches, nor suggests, correlating k sections of a stored received binary-coded spread sequence at a frequency k*f with the corresponding k sections of a locally generated spread sequence, f denoting the frequency at which the received spread sequence arrives, k (i.e., the number of sections being smaller than a number of bits m of the binary-coded spread sequence. Further, **OSTMAN** does not teach or suggest correlating the k sections of the stored received binary spread sequence with corresponding k sections of the locally generated spread sequence, **each of the k sections including more than one bit**. Note that, in the specification of the instant application, the term "bit" denotes a chip of the spreading sequence. See page 12 of the instant application, line 14 and page 15, lines 13 - 16.

Rather, in connection with Fig. 8, **OSTMAN** discloses in col. 7, lines 15 - 27:

> Thus, a pair of adjacent register stages 66 and 68 will contain a pair of sampled symbol amplitude values from a received symbol signal. An output from each of stages 68 in register 62 is fed to a multiplier 70, to which one of a plurality of coefficients C1-C4 is applied. Those coefficients are determined from the expected symbol values of the synchronizing signal sequence assigned to radio telephone 10. Similarly, an output from each of stages 66 in register 64 is applied to a multiplier 72. Also applied to each multiplier 72 is a set of coefficients C1-C4. **Thus it can be seen, that the outputs from multipliers 70 and 72 represent a correlation of the sampled amplitude values and coefficients C1-C4, respectively.** [emphasis added by Applicants]

As such, **OSTMAN** discloses coefficient-wise multiplication using the multipliers 70 and 72, the outputs from multipliers 70 and 72 representing a correlation of sampled amplitude values and coefficients c1 to c4, respectively. Page 3 of the Office Action points to these coefficients c1 - c4 of **OSTMAN** as allegedly corresponding to Applicants claimed k sections. However, according to this interpretation, a section would always be composed of **only one** coefficient (e.g. c1). In contrast to this, Applicants' invention of claim 1 requires, among other limitations, that the k sections each be made up of **more than one bit**, each bit representing a chip. **OSTMAN** does not teach or suggest assigning **more than one of the coefficients c1 - c4 to a section.**

Further, assuming, arguendo, that the coefficients c1 - c4 are to be interpreted as Applicants' "sections", then the number of sections in **OSTMAN** would be equal to the number of coefficients c1-c4. However, in the invention of Applicants' claim 1, the number of sections k **is smaller** than the number of bits (i.e., smaller than the number of chips).

Additionally, **OSTMAN fails to provide any motivation** to a person of ordinary skill in the art, to modify **OSTMAN** to achieve Applicants' invention of claim 1, since **OSTMAN** teaches using, **for each of the coefficients c1 - c4**, a multiplier to obtain the correlations. See, col. 7 of **OSTMAN**, lines 9 - 40. Nor would a person of ordinary skill in the art, reading **OSTMAN**, be motivated to change the frequency at which k sections of the spread sequence to k*f, f denoting the frequency at which the received spread sequence arrives.

Nor does the **SCOTT** reference, cited in the Office Action in combination with **OSTMAN**, cure the above deficiencies of **OSTMAN** or provide any motivation to modify **OSTMAN** as suggested in the Office Action. Rather, **SCOTT** discloses a system for time division duplex communication between a base station and a plurality of user stations over a single frequency band. See the Abstract of **SCOTT**. In **SCOTT**, Fig. 18 depicts a correlator

arranged downstream from an A/D converter 1811. Col. 51 of **SCOTT**, lines 52 - 56, state:

> The A/D converter 1811 preferably performs one or two bit A/D conversion and operates at roughly four times the code rate or higher. Thus, code rates of 1.023 MHz to 10.23 MHz result in sample rates for A/D converter 1811 in the range of 4 to 50 MHz. [emphasis added by Applicants]

However, **SCOTT** neither teaches, nor suggests, splitting the stored received binary-coded spread sequence into *k* sections, each of the *k* sections including more than one bit, as required by Applicants' amended claim 1. Rather, were a person of ordinary skill in the art to combine the teachings of **OSTMAN** with those of **SCOTT**, as suggested in the Office Action, the teaching would motivate a person of skill to provide an A/D converter which is over-sampled and which operates at roughly four times the code rate or higher, resulting in sample rates in the range of 4 to 50 MHz. But, nothing in **SCOTT** and/or **OSTMAN** would motivate the person of skill to modify the references to arrive at the invention of Applicants' claim 1.

More particularly, page 3 of the Office Action alleges:

> Therefore, it would have been obvious to one skilled in the art at the time of the invention to incorporate the teaching of Scott in the system of Ostman by oversampling the received signal by placing the switch (received signal 1810 of Fig. 18) prior to the A/D (16 in Fig.8 of Ostman) to oversample four or eight times

the rate for the purpose of receiving a higher sampling rate of the received signal, and thus calculate a more accurate correlation measurement.

The Office Action seems to allege that one skilled in the art would operate the A/D converter in the system disclosed by **OSTMAN** at four times the code rate, as disclosed in **SCOTT** and would, therefore, arrive at a system where exactly four coefficients (c1-c4 of **OSTMAN**) and oversampling by a factor of four (**SCOTT**)are present. It must be emphasized that this arrangement is accidental, since the combination of **OSTMAN** and **SCOTT** does not provide any teaching or suggestion to **correlate the corresponding k sections at a frequency k*f, k denoting the number of sections**. In SCOTT, the oversampling factor is merely an isolated and meaningless number, unrelated to any number of sections.

As such, neither **OSTMAN**, nor **SCOTT**, taken alone, or in combination, teach or suggest all of the limitations of Applicants' amended claim 1.

It is accordingly believed that none of the references, whether taken alone or in any combination, teach or suggest the features of claims 1 and 4. Claims 1 and 4 are, therefore, believed to be patentable over the art. The dependent claims are believed to be patentable as well because they all are ultimately dependent on claims 1 and 4.

Finally, Applicants appreciatively acknowledge the Examiner's statement that claim 7 "would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims." In light of the above, Applicants respectfully believe that rewriting of claim 7 is unnecessary at this time.

In view of the foregoing, reconsideration and allowance of claims 1 - 2 and 4 - 7 are solicited.

In the event the Examiner should still find any of the claims to be unpatentable, counsel would appreciate receiving a telephone call so that, if possible, patentable language can be worked out.

If an extension of time for this paper is required, petition for extension is herewith made.

Please charge any fees that might be due with respect to Sections 1.16 and 1.17 to the Deposit Account of Lerner Greenberg Stemer LLP, No. 12-1099.

Respectfully submitted,

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For Applicants

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